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December 13, 1999

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ATTN: BOX PCT

Re: Application of Do-hyoung KIM
METHOD FOR DISPLAYING OPERATION STATE OF SYSTEM DEVICES IN NETWORK SYSTEM
Our Reference: Q57164
PCT/KR99/00215, filed May 3, 1999

Dear Sir:

Applicants herewith submit the attached papers for the purpose of entering the National stage under 35 U.S.C. § 371 and in accordance with Chapter I of the Patent Cooperation Treaty. Attached hereto is the application identified above which is a translation of PCT International Application No. PCT/KR99/00215, filed May 3, 1999, comprising the specification, claims, four (4) drawings and Preliminary Amendment. The executed Declaration and Power of Attorney and Assignment will be submitted at a later date.

The Government filing fee is calculated as follows:

Total Claims	5 - 20 =	0 x \$18 =	\$ 000.00
Independent Claims	2 - 3 =	0 x \$78 =	\$ 000.00
Base Filing Fee	(\$970.00)		\$ 970.00
Multiple Dep. Claim Fee	(\$260.00)		\$ 000.00
TOTAL FILING FEE			\$ 970.00

A check for the statutory filing fee of \$ 970.00 is attached. You are also directed and authorized to charge or credit any difference or overpayment to Deposit Account No. 19-4880. The Commissioner is hereby authorized to charge any fees under 37 C.F.R. 1.492; 1.16 and 1.17 and any petitions for extension of time under 37 C.F.R. 1.136 which may be required during the entire pendency of the application to Deposit Account No. 19-4880. A duplicate copy of this transmittal letter is attached.

Priority is claimed from:

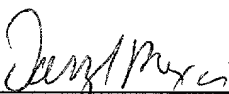
Korean Patent Application

98-16141

Filing Date

May 6, 1998

Respectfully submitted,
SUGHRUE, MION, ZINN, MACPEAK & SEAS
Attorneys for Applicant(s)

By: 
Darryl Mexic
Reg. No. 23,063

DM:tnj

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

KIM, Do-hyung

Appln. No.: 09/445,769

Group Art Unit: Unassigned

Filed: December 13, 1999

Examiner: Unassigned

For: METHOD FOR DISPLAYING OPERATION STATE OF SYSTEM DEVICE IN
NETWORK SYSTEM

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

IN THE DRAWINGS:

Please see the enclosed Proposed Drawing Correction.

IN THE SPECIFICATION:

Page 1, line 8, change "a device among" to --one of--.

Page 2, line 5, change "a concerned" to --the specific--;

, line 15, change "sight" to --time and in one place--;

, line 24, before "device", insert --client--;

, line 25, change "when" to --where--;

, line 27, change ", comprising" to --. The method comprises--.

Page 3, line 6, change "periodical" to --periodic--;

, line 13, before "device", insert --client--;

, line 13, change "when" to --where--;

, line 16, change ", comprising" to --. The method comprises--.

006740-69254460

Page 4, line 27, change “which is” to --is the means by which--.

Page 5, line 4, before “1394”, insert --IEEE--.

IN THE CLAIMS:

1. (Twice Amended) A method for displaying changes in [the] operation states of network devices on a display screen of a client device which operates as a client in a network [when] where various digital devices connected to the network operate as the client or the servers, having the same protocol layer as an Internet protocol stack on the upper network communication layer, comprising the steps of:

(a) [the device which operates as the client (the client device)] establishing a communication channel by the client device with respect to server devices [which operate as the servers (server devices)];

(b) [the server devices] transmitting a predetermined signal for indicating changes in the operation states of the server devices by the server devices [thereof] to the client device when the server devices perform a predetermined operation and stops the operation or performs another operation; and

(c) [the client device] receiving the predetermined signal from the server devices by the client device and displaying the change in the operation state of a [concerned] specific server device on a screen thereof.

Claim 2, line 2, change “a” to --said--;

, line 2, change “periodical” to --periodic--.

Claim 3, line 2, change “established” to --establishes--.

5. (Twice Amended) A method for displaying changes in [the] operation states of network devices on a display screen of a client device which operates as a client in a network [when] where various digital devices connected to the network operate as the client or the servers, having the same protocol layer as an Internet protocol stack on the upper network communication layer (physical layer), comprising the steps of:

[the client device] receiving data on the operation states of the server devices connected to the network bus by the client device, in a network communication layer;

[the client device] examining whether the previous operation state data of the server devices is different from the current operation state data by the client device, in a network communication layer;

[the client device] transmitting the current operation state of a server device by the client device, whose previous operation state data is different from the current operation state data from the network communication layer, to a hypertext transmission protocol (HTTP) layer which is the upper most protocol layer of the client device; and

[the client device] displaying the change of the operation state of the concerned server device by the client device on a screen thereof, according to the contents transmitted to the HTTP layer.

IN THE ABSTRACT:

Line 3, after "method", insert --provides--;

Line 5, after both "device" and "network", insert --,--;

Line 8, change "layer," To --layer. The method--;

Line 18, change "operations" to --operation--.

REMARKS

Claims 1-5 are pending in the present in the above-cited application. The above amendments to the specification are made to correct noted informalities. The above amendments to the claims are made to place the claims in even better condition for initial examination. The Examiner is respectfully requested to enter the above amendments prior to examining the application.

Conclusion and request for telephone interview:


Applicant respectfully requests the Examiner to withdraw all objections and rejections, and to find the application now to be in condition for allowance with all of the claims. If the Examiner feels that the disposition of the application could be expedited by speaking with Applicant's representative, the Examiner is respectfully invited to **call the undersigned attorney** at the number shown below.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,

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Date: April 19, 2000


Kevin F. Turner
Registration No. 43,437

432 Rec'd PCT/PTO 13 DEC 1999

ATTN: BOX PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Do-hyoung KIM

Serial No.: NOT YET ASSIGNED

PCT/KR99/00215, filed May 3, 1999

Filed: December 13, 1999

For: METHOD FOR DISPLAYING OPERATION STATE OF SYSTEM DEVICES IN NETWORK SYSTEM

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

Prior to examination of the above-identified application, please amend the above-mentioned application as follows:

IN THE SPECIFICATION:

Page 3, line 23, delete "1394" and insert --network--.

IN THE CLAIMS:

Claim 1, line 4, delete "an" and insert --a--.

Claim 5, line 11, delete "1394" and insert --network--.

REMARKS

Applicants submit no questions of new matter should arise and entry is requested.

Respectfully submitted,

Jerry Meyer

Darryl Mexic

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Date: December 13, 1999

METHOD FOR DISPLAYING OPERATION STATE OF SYSTEM DEVICES
IN NETWORK SYSTEM

Technical Field

5 The present invention relates to a network, and more particularly, to a method for displaying a network system operation state so that a user can see changes in the operations of devices connected to the network through a device among the devices in real time.

10 Background Art

FIG. 1 shows a protocol stack of a network device. A general protocol stack in which respective devices adopting a network communication function is comprised of a physical layer 100 which is the lowest layer 100, a link layer 110, a transaction layer 120, and a serial bus management layer 130 which is the upper most layer. The physical layer 100 receives a bit column from the link layer 110 during transmission, obtains the right to use a serial bus, encodes the bit column, converts the bit column into an electrical signal, and transfers the signal to an external bus. Reverse processes are performed during reception. The link layer 110 deals with data in units of a packet and has functions of constructing and dismantling a packet, detecting errors, and managing a bus cycle. In general, the physical layer 100 and the link layer 110 are comprised of a chipset. The transaction layer 120 provides a transaction such as reading/writing/locking of data and performs asynchronous communication with different devices (or nodes) on the network bus using the service provided by the lowest layer. A serial bus management layer 130 holds various material structures such as a configuration ROM and a control and status register (CSR) and manages the connection structure of an entire system connected to a power supply and a bus (topology)/ speed map.

30 The transaction layer 120 and the serial bus management layer 130 are formed of software and is realized by being built into the microcomputer of the respective devices.

FIG. 2 shows a block diagram of a digital device having the network communication function. The digital device is comprised of a device dependent hardware 200, a microcomputer 210, a physical layer execution block 220, and a link layer execution block 230. The device dependent hardware 200 executes a characteristic function of a concerned device. The microcomputer 210 for supporting the network communication executes the operation including the transaction layer and the serial bus management layer, described in FIG. 1. The physical layer execution block 220 is hardware for realizing the function of the physical layer 100 of FIG. 1. The link layer execution block 230 is hardware for realizing the CIP header inserting/removing functions of the link layer 110 and IEC 61883.

In a conventional technology, various digital devices are connected to each other on the network as mentioned above and transmit and receive data. However, a user cannot see the operations of all devices at one sight.

Disclosure of the Invention

To solve the above problem, it is an object of the present invention to provide a method for displaying the operations of devices over a network by which a user can see the operations of the devices on the network on a screen of one device and control the devices.

Accordingly, to achieve the above objective, there is provided a method for displaying changes in the operation states of network devices on a display screen of a device which operates as a client in an IEEE 1394 network when various digital devices connected to the network operate as the client or the servers, having the same protocol layer as an Internet protocol stack on the upper network communication layer, comprising the steps of (a) the device which operates as the client (the client device) establishing a communication channel with respect to devices which operate as the servers (server devices), (b) the server devices transmitting a predetermined signal for indicating changes in the operation states thereof to the client device when the server devices perform a

predetermined operation and stops the operation or performs another operation, and (c) the client device receiving the predetermined signal from the server devices and displaying the change in the operation state of a concerned server device on a screen thereof.

5 The client device preferably establishes a communication channel with respect to the server devices by periodical polling in the step (a).

A Java applet preferably operates through the communication channel when the client device established the communication channel with respect to the server devices in step (a).

10 The network is preferably an IEEE 1394 network.

To achieve the above objective, there is provided a method for displaying changes in the operation states of network devices on a display screen of a device which operates as a client in a network when various digital devices connected to the network operate as the client or the
 15 servers, having the same protocol layer as an Internet protocol stack on the upper network communication layer (physical layer), comprising the steps of the client device receiving data on the operation states of the server devices connected to the network bus, in a network communication layer, the client device examining whether the previous operation state data of
 20 the server devices is different from the current operation state data, in a network communication layer, the client device transmitting the current operation state of a server device, whose previous operation state data is different from the current operation state data from the 1394 communication layer, to a hypertext transmission protocol (HTTP) layer which is the upper
 25 most protocol layer of the client device, and the client device displaying the change of the operation state of the concerned server device on a screen thereof according to the contents transmitted to the HTTP layer.

Brief Description of the Drawings

30 The above objective and advantages of the present invention will become more apparent by describing in detail a preferred embodiment thereof with reference to the attached drawings in which:

FIG. 1 shows a protocol stack of a network device;

FIG. 2 shows a block diagram of a digital device having a network communication function;

FIG. 3 is an example of the structure of the network for describing
5 the present invention;

FIG. 4 shows the network protocol stack of FIG. 3;

FIG. 5 is a flowchart of a method for displaying changes in the operation states of network devices according to the present invention;

FIG. 6 is a flowchart of another method for displaying changes in the
10 operation states of network devices according to the present invention; and

FIG. 7 shows the contents of FIG. 6 using a protocol layer diagram of a digital TV.

Best mode for carrying out the Invention

15 FIG. 3 is an example of the structure of a network for describing the present invention. A digital TV 300, a digital VCR 310, a digital camcorder 320, and a digital set top box 330 are connected to a network. The respective digital devices 300 through 330 transmit and receive data according to a client/server method used in a general intranet/Internet,
20 including a protocol layer as shown in FIG. 4. Here, the digital TV 300 by which a user can see predetermined images and character data on a screen operates as a client and includes a web browser. The digital devices 310 through 330 play the same role as that of a web server on the Internet. The hypertext documents to be transferred by the respective
25 devices is in a HTML document hierarchy including information on the functions and the operations of the respective devices. The digital TV 300 which is the client accesses the respective web sites from the web server devices 310 through 330 using the web browser and controls concerned devices. Namely, a user can control the characteristic operations such as
30 reproducing and recording operations of the remaining devices, i.e., the DTV 300 through the DVCR 310.

FIG. 4 shows the network protocol layer of FIG. 3, which is

comprised of a physical layer 400, an IP layer 410, a transmission control protocol (TCP) layer 420, and hypertext transmission protocol (HTTP) layer 430. The physical layer 400 is for transmitting and receiving data through a 1394 network bus. In the IP layer 410, a protocol for independently
 5 connecting independently managed communication networks to each other is adopted in order to use the communication networks together. In the TCP layer 420, a communication net protocol of a system connected through the Internet is adopted. In the HTTP layer 430, a communication protocol used for exchanging the hypertext document in the Internet is
 10 adopted.

FIG. 5 is a flowchart of a method for displaying changes in the operation states of network devices of the present invention, in which changes in the operation states of server devices in the system as shown in FIG. 3, connected to the network, to which the protocol stack as shown in
 15 FIG. 4 is applied, are displayed. First, the digital TV 300 establishes a communication channel with respect to the digital VCR 310, the digital camcorder 320, and the digital set top box 330, which are server devices (step 500). The communication channel can be established by a method of maintaining a channel connection once a channel is opened and a polling
 20 method in which the digital TV 300 repeats processes of opening a channel, communicating with a server device, and terminating a communication connection by closing the channel, with respect to the server devices 310 through 330. Also, when the digital TV 300 establishes a channel with respect to the server device, it is possible to easily transmit
 25 a predetermined signal with respect to the change in the operation state of the server device from the server device to the digital TV 300 by operating a Java applet which establishes a communication between the client and the server performed on the network. When the channel established server device performs a predetermined operation and stops the operation or
 30 performs another operation, a predetermined signal indicating a change in the operation is transmitted to the digital TV 300 through the established channel (step 510). The digital TV 300 receives the predetermined signal

indicating the change in the operation and displays the change in the operation of a concerned server device or contents of the change on a screen (step 520).

FIG. 6 is a flowchart of another method for displaying changes in the operation states of network devices according to the present invention, in which changes in the operations states of server devices in the system as shown in FIG. 3, connected to a network, to which the protocol stack as shown in FIG. 4 is applied, are displayed. First, the digital TV 300 takes data on the operations of the server devices 310 through 330 transmitted to the network bus in the physical layer (step 600). The digital TV 300 memorizes previous operation states of the server devices, receives the current operation states of the server devices, compares the received current operation states with the previous operation states, and examines whether they are different from each other (step 610). The physical layer of the digital TV 300 transmits the current operation state of a server device, whose previous operation state data is different from the current operation state data from the 1394 layer, to the hypertext transmission protocol HTTP layer which is the upper most protocol layer (step 620). The digital TV 300 displays the contents of the change in a server device whose operation state is changed, which are transmitted to the HTTP layer, on a screen (step 630).

FIG. 7 shows the contents of FIG. 6 using the protocol layer diagram of the digital TV. It is noted from FIG. 7 that the operation state data of the server device received on the network bus can be directly transmitted to the HTTP layer, skipping over the remaining layers.

The network mentioned here is a network such as an IEEE 1394 network in which communication can be performed between devices connected to the network by a client/server method.

The above-mentioned embodiment of the present invention can be embodied in a program which can be executed in a computer. The embodiment can be realized in a generally used digital computer for operating the program from a medium used in the computer. The medium

can be a storage medium such as a magnetic storage medium (CD-ROM and DVD) or a carrier wave (transferred through the Internet).

The recording medium stores a program code which can execute a first step in which a client device establishes a communication channel with respect to a server device, a second step in which a predetermined signal is transmitted from the server device to the client device when the server device performs a predetermined operation and stops the operation or performs another operation, and a third step in which the client device receives a predetermined signal from the server device and displays the change in the operation state of a concerned server device on the screen thereof, in the network system having the protocol stack of FIG. 4. The program is positioned in an upper layer as it prevents more errors of the video data. The upper layer and the lower layer have backward compatibility in which the upper layer includes the lower layer. The program is coded so that more errors are prevented with respect to data which considerably affects picture quality.

A functional program, a code, and a code segment for realizing the present invention can be easily realized by programmers knowledgeable in the art.

Industrial Applicability

According to the present invention, the user can see changes in the operations states of the devices connected to a network on the screen of one device among the devices and can effectively control the operation of a desired device.

What is claimed is:

1. A method for displaying changes in the operation states of network devices on a display screen of a device which operates as a client in an network when various digital devices connected to the network
5 operate as the client or the servers, having the same protocol layer as an Internet protocol stack on the upper network communication layer, comprising the steps of:

(a) the device which operates as the client (the client device) establishing a communication channel with respect to devices which
10 operate as the servers (server devices);

(b) the server devices transmitting a predetermined signal for indicating changes in the operation states thereof to the client device when the server devices perform a predetermined operation and stops the operation or performs another operation; and

15 (c) the client device receiving the predetermined signal from the server devices and displaying the change in the operation state of a concerned server device on a screen thereof.

2. The method of claim 1, wherein the client device establishes
20 a communication channel with respect to the server devices by periodical polling in the step (a).

3. The method of claim 1, wherein a Java applet operates through the communication channel when the client device established the
25 communication channel with respect to the server devices.

4. The method of claim 1, wherein the network is an IEEE 1394 network.

30 5. A method for displaying changes in the operation states of network devices on a display screen of a device which operates as a client in a network when various digital devices connected to the network operate

as the client or the servers, having the same protocol layer as an Internet protocol stack on the upper network communication layer (physical layer), comprising the steps of:

the client device receiving data on the operation states of the server
5 devices connected to the network bus, in a network communication layer;

the client device examining whether the previous operation state data of the server devices is different from the current operation state data, in a network communication layer;

the client device transmitting the current operation state of a server
10 device, whose previous operation state data is different from the current
operation state data from the 1394 communication layer, to a hypertext
transmission protocol (HTTP) layer which is the upper most protocol layer
of the client device; and

the client device displaying the change of the operation state of the
15 concerned server device on a screen thereof according to the contents
transmitted to the HTTP layer.

Abstract of the Invention

A method for displaying changes in the operation states of devices in an IEEE 1394 network system is provided. The method for displaying changes in the operation states of network devices on a display screen of a device which operates as a client in an IEEE 1394 network when various digital devices connected to the network operate as the client or the servers, having the same protocol layer as an Internet protocol stack on the upper network communication layer, includes the steps of (a) the device which operates as the client (the client device) establishing a communication channel with respect to devices which operate as the servers (server devices), (b) the server devices transmitting a predetermined signal for indicating changes in the operation states thereof to the client device when the server devices perform a predetermined operation and stops the operation or performs another operation, and (c) the client device receiving the predetermined signal from the server devices and displaying the change in the operation state of a concerned server device on a screen thereof. According to the present invention, the user can see changes in the operations states of the devices connected to the IEEE 1394 network on the screen of one device among the devices and can effectively control the operation of a desired device.

1/4

FIG. 1

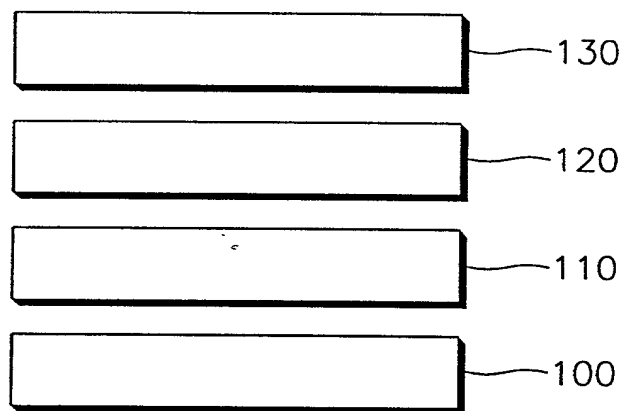
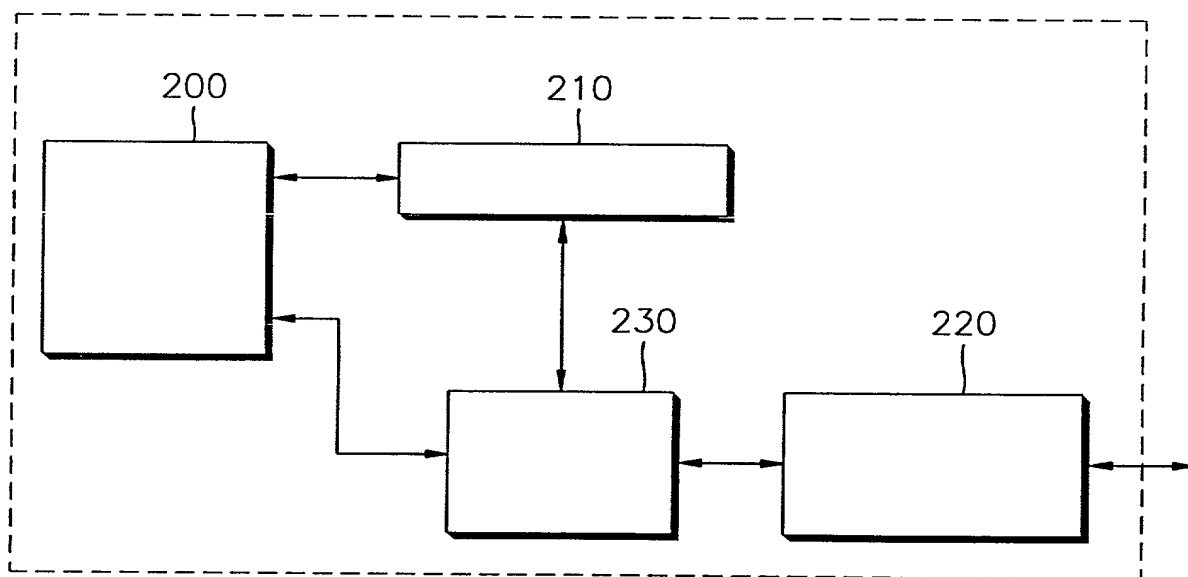


FIG. 2



2/4

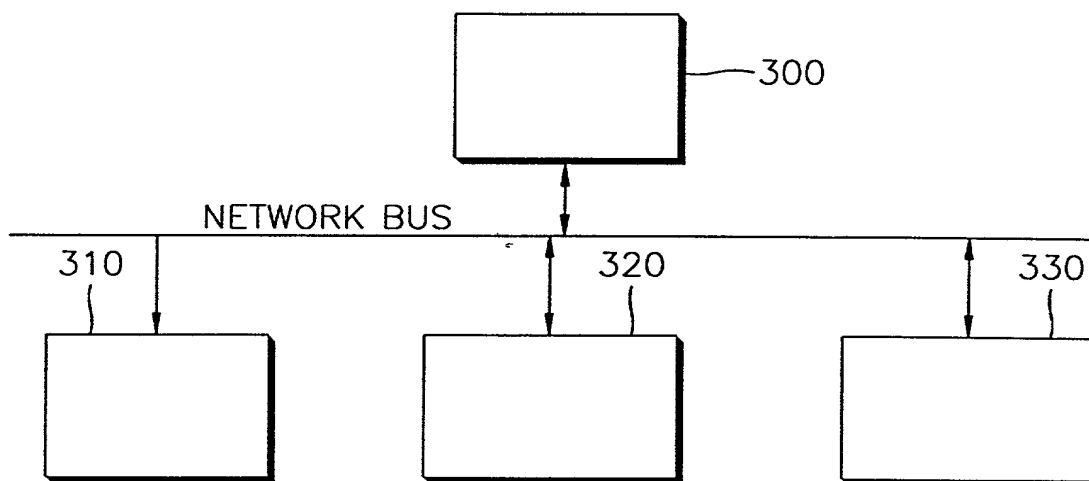
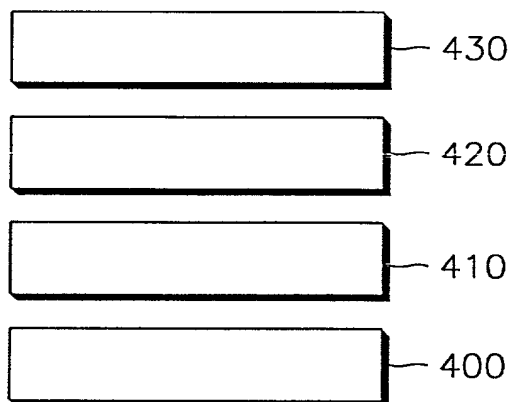
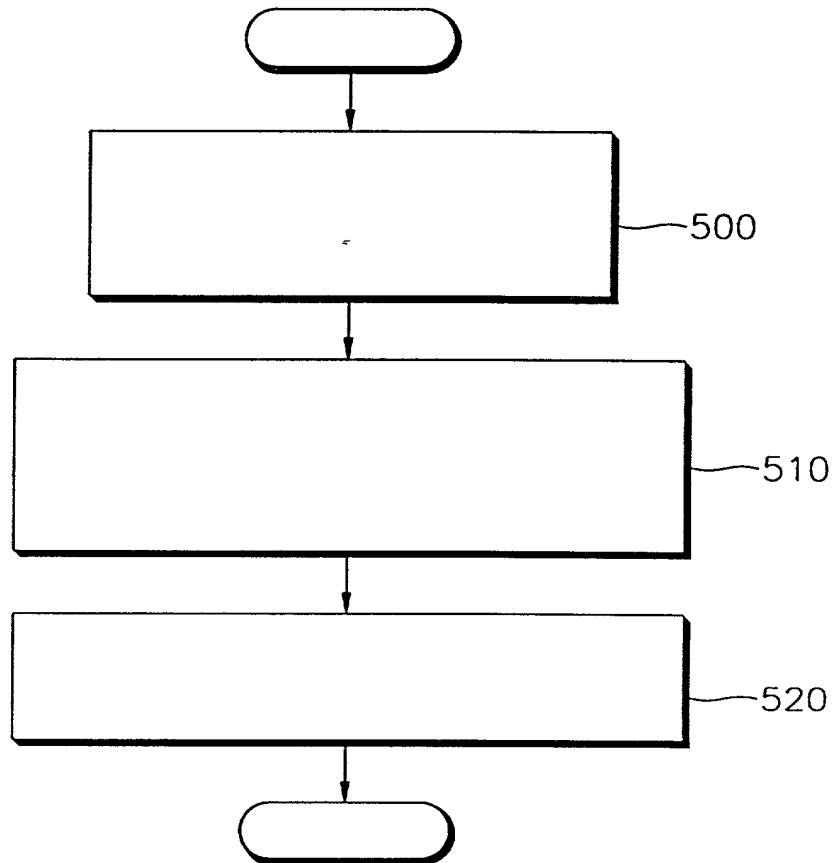
FIG. 3**FIG. 4**

FIG. 5





PTO/PCT Rec'd 19 APR 2000
09/445769

#4

PATENT APPLICATION
Attorney Docket No. Q-

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

KIM, Do-hyung

Appln. No.: 09/445,769

Group Art Unit: Unassigned

Filed: December 13, 1999

Examiner: Unassigned

For: METHOD FOR DISPLAYING OPERATION STATE OF SYSTEM DEVICE IN
NETWORK SYSTEM

REQUEST FOR APPROVAL OF PROPOSED DRAWING CORRECTIONS

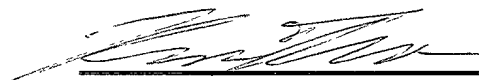
Assistant Commissioner of Patents
Washington, D.C. 20231

ATTN: OFFICIAL DRAFTSPERSON

Sir:

Submitted herewith are four (4) sheets of proposed drawing corrections indicated in red manuscript. The Examiner is respectfully requested to acknowledge receipt and indicate approval of these proposed corrections.

Respectfully submitted,



Kevin F. Turner
Registration No. 43,437

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Date: April 19, 2000

000000-0325160

FIG. 1

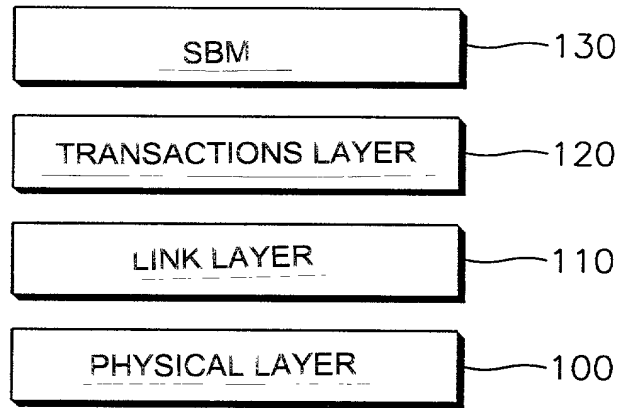


FIG. 2

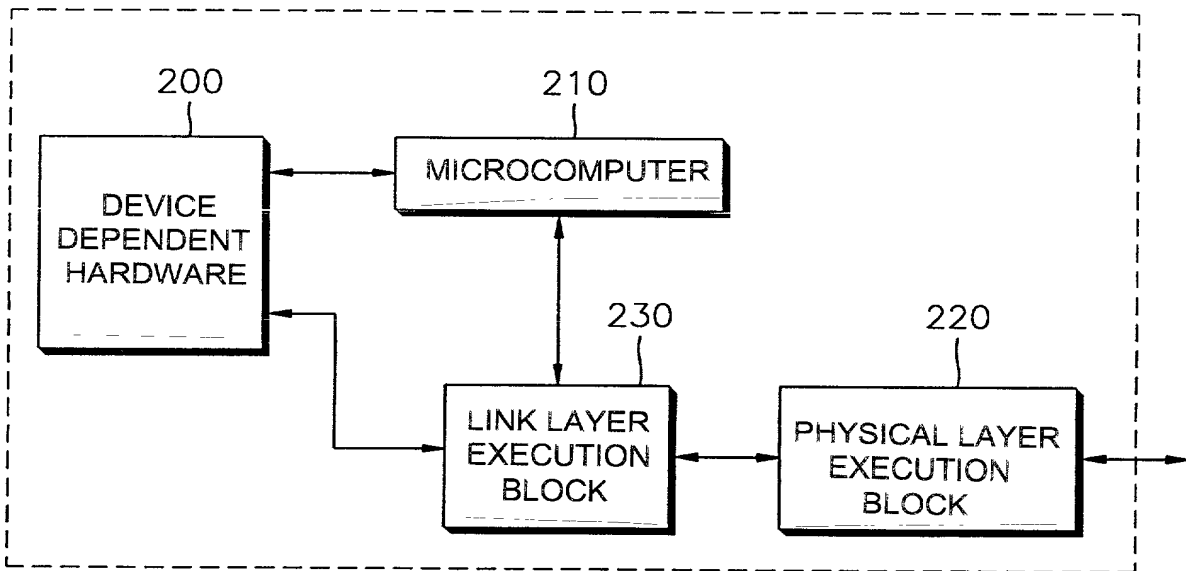


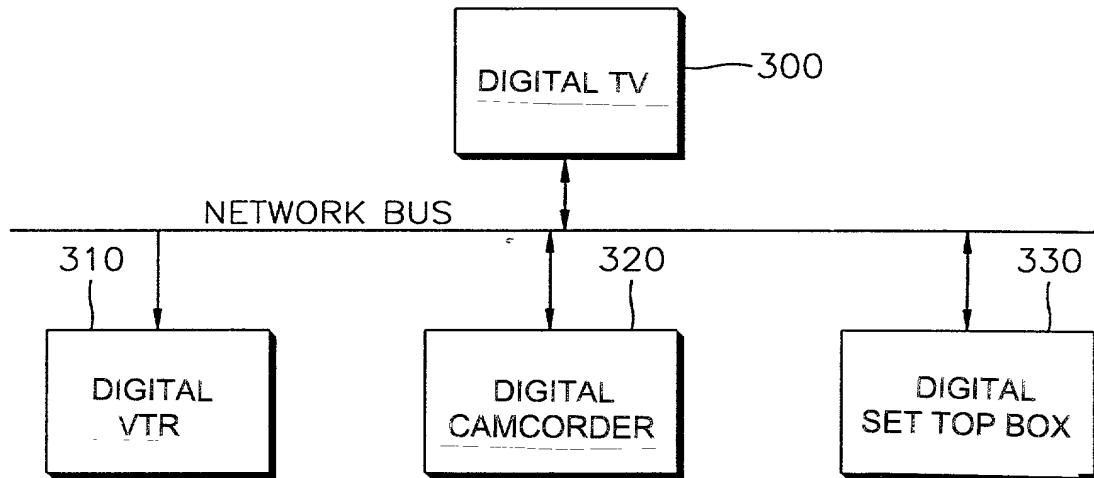
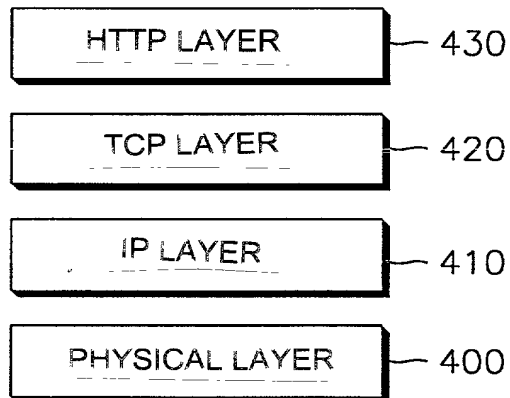
FIG. 3**FIG. 4**

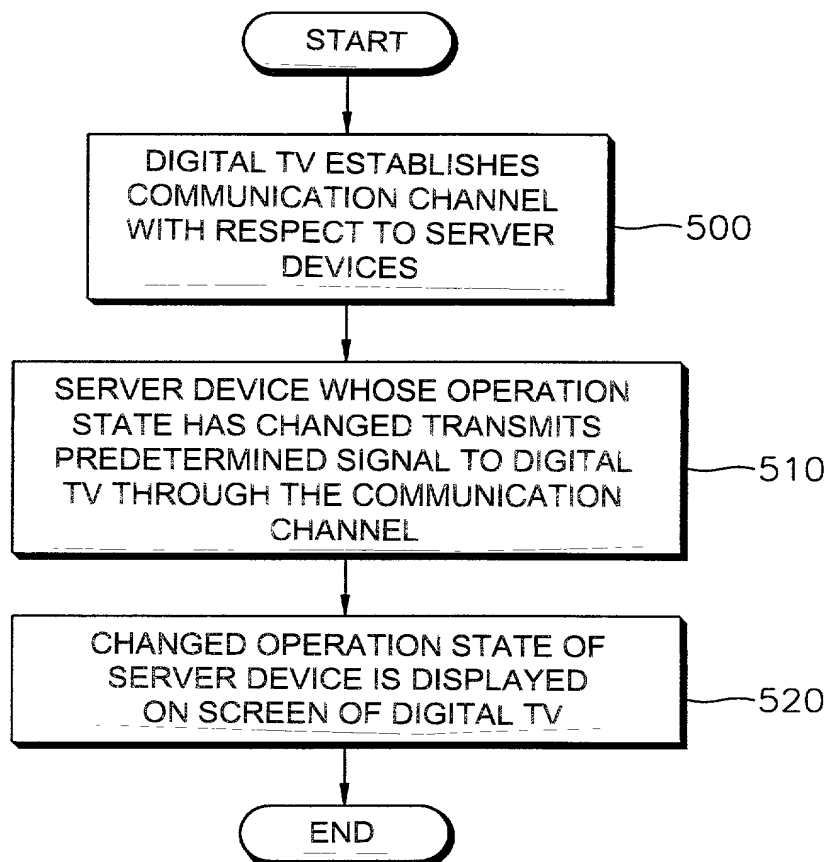
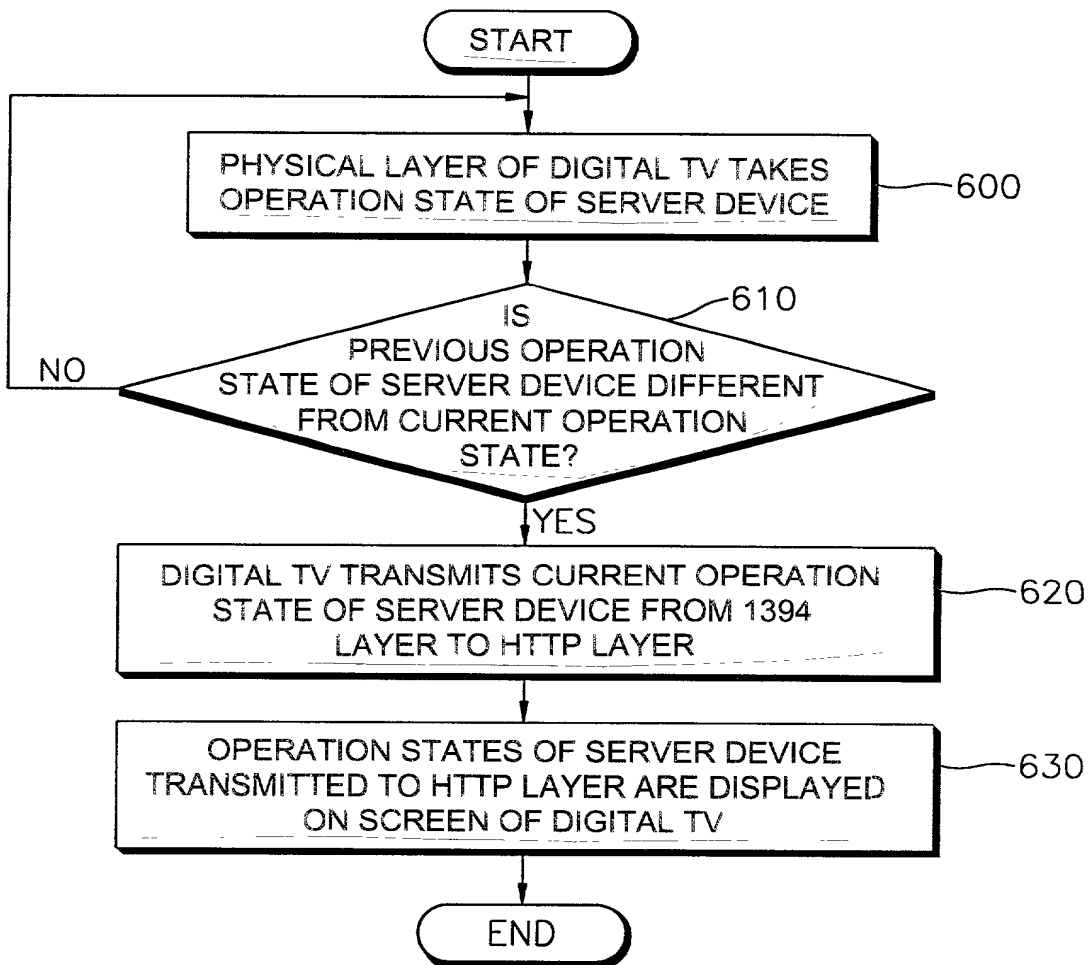
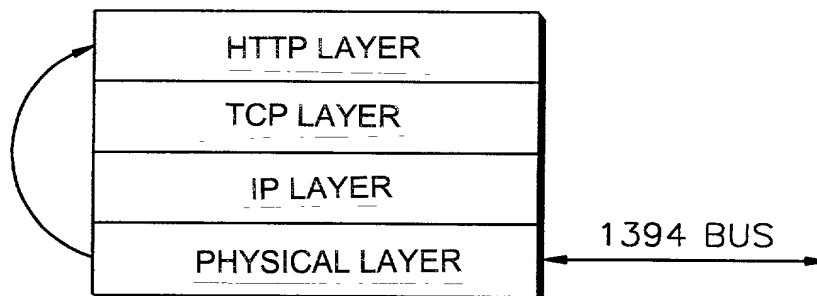
FIG. 5

FIG. 6**FIG. 7**

SERVER DEVICE OPERATION STATE DATA TRANSMISSION
PROTOCOL OF DIGITAL TV

Declaration and Power of Attorney For Patent Application

출원서원본상의 선서서와 위임장

Korean Language Declaration

한국어 선서서

하기한 발명자인 본인은 다음과 같이 선서합니다.

본인의 주소, 우편주소 및 국적은 본인의 이름말에 기재된 바와 같습니다.

본인은 아래에 기재된 발명에 대한 최초의 단독발명자 (단 한사람의 이름이 아래에 기재되었을 경우) 또는 공동발명자 (복수의 발명자가 아래에 기재되었을 경우) 라고 믿습니다.

아래 박스에 표시가 되어있지 않는 한
특허설명서는 여기에 첨부되어 있음

☐ __월 __일 미국출원번호 또는 PCT 국제출원번호
____로 출원되었으며
__월 __일 수정되었습니다.
(만약 적용가능하면)

본인은 상기 수정출원을 포함하여 특허설명서 내용을 검토하였으며 잘 파악하고 있음을 선서합니다.

본인은 연방규정법전 37 장 1.56 편에 따라 특허자격에 있어 중요한 정보자료를 밝히는 것이 본인의 의무임을 인정합니다.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

METHOD FOR DISPLAYING OPERATION STATE
OF SYSTEM DEVICES IN NETWORK SYSTEM

the specification of which is attached hereto unless the following box is checked:

☒ was filed on 13 December 1999
as United States Application Number or
PCT International Application Number
09/445,769 and was amended on
____ (if Applicable)
PCT/KR 99/00215, filed 3 May 1999

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above

I acknowledge the duty to disclose information which is material to patentability as defined in the Title 37, Code of Federal Regulations, Section 1.56.

Korean Language Declaration

한국어 선서서

본인은 미합중국법전 35 장 119(a)-(d)편 또는 특허 또는 발명자 증서를 위한 그 어떤 외국출원의 365(b)편 또는 미국 이외에 최소한 한 국가를 지정하는 PCT 국제출원의 365(a)편하의 외국우선권을 주장합니다. 아래 박스에 표시함으로써 기재하고 확인합니다.

Prior Foreign Application(s)

이전의 외국 출원
98-16141

Rep. of Korea

(Number) (번호)

(Country) (국명)

(Number) (번호)

(Country) (국명)

(Number) (번호)

(Country) (국명)

본인은 미합중국법전 35 장, 아래에 기재한 그 어떤 미 국가출원의 119(e)편하의 권한을 주장합니다.

(Application No) (출원번호)

(Filing Date) (출원일)

본인은 미합중국법전 35 장, 그 어떤 미국출원의 120 편 또는 미국을 지정하는 그 어떤 PCT 국제출원의 365(c)편하의 권한을 주장합니다. 미합중국법전 35 장 112 편의 첫단락에 제시된 방법에 따라 이전의 미국 또는 PCT 국제출원에 이제까지 기재된 본출원 내용은 밝혀지지 않았습니니다. 본인은 연방규정법전 37 장 1.56 편에 따라 이전출원의 출원일과 국내 또는 PCT 국제출원의 출원일사이에 유효된 특허자격에 있어 중요한 정보자료를 밝히는 것이 본인의 의무임을 인정합니다.

(Application No) (출원번호)

(Filing Date) (출원일)

(Application No) (출원번호)

(Filing Date) (출원일)

본인이 아는 바에 의하면 여기에 작성된 모든 기재사항들과 정보자료로 제출한 모든 기재사항들은 진실된 것임을 선서하며, 그리고 이러한 진술이 고의적인 허술진술이거나 이와 비슷한 경우에는 미합중국법전 18 장 1001 편에 따라 벌금이나 징역형 또는 그 병과형으로 처벌되며, 허위진술은 본출원의 유효성이나 발급된 특허증을 위태롭게 할 수도 있다는 점을 선서합니다

I hereby claim foreign priority under Title 35, United States Code, Section 119 (a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT International application which designed at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application having a filing date before that of the application on which priority is claimed.

Priority Not Claimed

우선권 주장안함

6 May 1998

(Day/Month/Year Filed) (출원년월일)

(Day/Month/Year Filed) (출원년월일)

(Day/Month/Year Filed) (출원년월일)

I hereby claim the benefit under Title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below

(Application No) (출원번호)

(Filing Date) (출원일)

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s), or 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code Section 112. I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of application

(Status Patented, Pending, Abandoned) (현황 특허완료, 심사중, 포기됨)

(Status Patented, Pending, Abandoned) (현황 특허완료, 심사중, 포기됨)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Korean Language Declaration

한국어 선서서

위임장. 본인은 본건출원과 관련된 모든 사무를 처리하기 위하여 대리인을 지명합니다. 상기 각자는 대리인과 취소 및 업무제휴가 되어있는 대리인을 지명할 전권을 갖습니다. (성명 및 등록번호 기재)

POWER OF ATTORNEY As a named inventor I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith
(list name and registration number)

I hereby appoint John H. Mion, Reg. No. 18,879; Donald E. Zinn, Reg. No. 19,046; Thomas J. Macpeak, Reg. No. 19,292; Robert J. Seas, Jr., Reg. No. 21,092; Darryl Mexic, Reg. No. 23,062; Robert V. Sloan, Reg. No. 22,772; Peter D. Olexy, Reg. No. 24,513; J. Frank Osha, Reg. No. 24,625; Waddell A. Biggart, Reg. No. 24,861; Robert G. McMorrow, Reg. No. 19,093; Louis Gubinsky, Reg. No. 24,835; Neil B. Siegel, Reg. No. 25,200; David J. Cushing, Reg. No. 28,703; John R. Inge, Reg. No. 26,946; Joseph J. Ruch, Jr., Reg. No. 26,577; Sheldon I. Landsman, Reg. No. 25,430; Richard C. Turner, Reg. No. 29,710; Howard L. Bernstein, Reg. No. 25,665; Alan J. Kasper, Reg. No. 25,426; Kenneth J. Burchfiel, Reg. No. 31,333; Gordon Kit, Reg. No. 30,764; Susan J. Mack, Reg. No. 30,951; Frank L. Bernstein, Reg. No. 31,484; Mark Boland, Reg. No. 32,197; William H. Mandir, Reg. No. 32,156; Scott M. Daniels, Reg. No. 32,562; Brian W. Hannon, Reg. No. 32,778; Abraham J. Rosner, Reg. No. 33,276; Bruce E. Kramer, Reg. No. 33,725; Paul F. Neils, Reg. No. 33,102; and Brett S. Sylvester, Reg. No. 32,765, my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and request that all correspondence about the application be addressed to SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC, 2100 Pennsylvania Avenue, N.W., Washington, D.C. 20037-3202

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기재사항과 서명을 제공하십시오)

(Supply similar information and signature for third and
subsequent joint inventors)